THE IMPACT OF ANOTHER PERSON'S RESPONSES TO OPINION COMMUNICATION: SHARED REALITY, EPISTEMIC TRUST, AND BELIEF CERTAINTY

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Agreement has been linked to both epistemic and interpersonal benefits. As such, people like to be in agreement with others and strive to stay in agreement. Yet, little is known about whether and how the way in which agreement is reached affects epistemic outcomes. In a lab experiment with a 3 x 2 design, undergraduate participants stated their opinion about a target person to a partner who ostensibly (a) either agreed before and after the communication (fortuitous agreement), shifted from disagreement to agreement (persuaded agreement), or consistently disagreed (no agreement); and (b) either praised their argument quality (substance evaluation) or presentational style (style evaluation). I hypothesized that the fortuitous and persuaded agreement conditions would yield a greater experience of shared reality (H1) and thus, greater epistemic outcomes than the no agreement condition (H2A), and that the relationship between agreement and epistemic outcomes would be mediated by the experience of shared reality (H2B). I also hypothesized that a substance evaluation would lead to greater shared reality and epistemic outcomes than a style evaluation, but only in the persuaded agreement condition (H3). Results supported H1 and H2A, partially supported H2B, but did not support H3. The fortuitous and persuaded agreement conditions yielded greater shared reality, higher belief certainty, and greater epistemic trust than the no agreement condition. Agreement type's effect on epistemic trust was mediated by the experience of shared reality but shared reality did not mediate the

relationship between agreement type and belief certainty. A substance (vs. style) evaluation did not lead to greater shared reality or epistemic benefits. These findings fill an important gap in the literature and highlight the utility of considering both how agreement is reached and the resulting experience of shared reality when examining epistemic outcomes of agreement.

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1.0 INTRODUCTION

People like when others agree with them. Individuals are motivated to share their understanding of the world, especially their social world, and their inner states—their beliefs, feelings, and attitudes—with others (Echterhoff, Higgins, & Levine, 2009). They have a desire to maintain harmony in their judgments with others and to reduce attitude discrepancies to remain in agreement with others (Hovland & Rosenberg, 1960; Matz & Wood, 2005). Festinger (1954) even suggested that the motivation to seek evaluation of one's opinions and abilities from others is a contributing factor to humans' gregariousness. In accordance with this idea, past research has shown both interpersonal (Byrne, 1962; Byrne, Nelson, & Reeves, 1966; Finkel & Eastwick, 2015) and epistemic consequences of agreement (Byrne, 1971; Echterhoff, Higgins, et al., 2009; Hardin & Higgins, 1996; Sigall, 1970). For example, agreement leads to increased attraction (Byrne, 1962) and a stronger belief that one's idea is valid (Hardin & Higgins, 1996).

Although it is clear that agreement is important and impactful, it is unclear whether the way in which agreement is reached matters. Arriving at agreement in different ways may have different outcomes for both the relational and epistemic outcomes that emerge. Although the primary focus of this project is on epistemic outcomes, it is worthwhile to review the interpersonal consequences of agreement because, as it will become apparent, they derive from the epistemic impact elicited by agreement.

Byrne (1962) suggested that attitude similarity is a powerful variable in determining affective responses and is one of the major sources of reward in interpersonal relationships. In support of this idea, research has shown that similarity, including attitude similarity, predicts attraction (Byrne, 1962; Byrne, 1971; Finkel & Eastwick, 2015; Miller, 2001) and that sharing inner states with a partner produces liking above and beyond sharing characteristics with him or her (Echterhoff, Higgins, et al., 2009; Miller, 2001).

These interpersonal consequences of attitude similarity are thought to be based on a system of reward and punishment (Byrne, 1962; Byrne, 1971; Finkel & Eastwick, 2015; Reid, Davis, & Green, 2013). Good feelings arise from agreement with others, whereas negative feelings arise from disagreement. According to the reinforcement approach (Reid et al., 2013), an individual associates the good feelings that arise from others agreeing with one's own views with those specific others. For example, if Jenny learns that Josh agrees with her, she feels positively about this agreement, and directs these positive feelings towards Josh. If Jenny learns that Josh disagrees with her, she feels negatively about the disagreement, and directs these negative feelings toward Josh.

The good feelings that arise from agreement are due to agreement's epistemic impact. Attitude similarity satisfies our need for consensual validation—our need to feel that we can predict our environment and that we are correct (Byrne, 1962; Byrne, 1971; Finkel & Eastwick, 2015; Montoya, Horton, & Kircher, 2008; Reid et al., 2013; Sigall, 1970). Attitude similarity achieves this because social consensus produces the perception of an objective reality (Echterhoff, 2012; Echterhoff, Higgins, et al., 2009; Hardin & Higgins, 1996; Matz & Wood, 2005; Rimé, 2009). That is, if others view the world in a similar way, individuals experience their own views as correct. As such, agreement is rewarding because it suggests that one is

logical and reduces the need for alternative explanations for why something is occurring (Gudykunst & Nishida, 1984).

Research supports the idea that agreement leads people to feel as though their views (which are shared by others) are logical and correct. For example, people show an increase in certainty about a belief to the extent that they see that belief as shared by others (Hardin & Higgins, 1996). People feel that their attitudes are more valid when others agree rather than disagree (Newcomb, 1953). Furthermore, when people think about the attitudinal contrast between their in-groups and an out-group, they feel more certain in their attitudes (Holtz & Miller, 2001). Petty and Krosnick (1995) also suggest that holding similar attitudes with others produces the social support that is necessary to augment certainty to a level sufficient for action.

Attitude dissimilarity, on the other hand, thwarts our need for consensual validation. This frustrates our drive to be correct and elicits a negative reaction, which is then directed toward the person who disagreed (Byrne, 1962; Byrne, 1971; Byrne et al., 1966; Montoya et al., 2008). Consensual invalidation—when others disagree—is threatening because it presents the possibility that one is illogical or inaccurate in predicting the world. Disagreement shakes one's confidence (Petty & Krosnick, 1995) and leads to uncertainty about the belief (Hardin & Higgins, 1996; Matz & Wood, 2005; McGarty, Turner, Oakes, & Haslam, 1993) and decreases in wellbeing and feelings of connectedness (Rimé, 2009). Attitude dissimilarity is experienced as uncomfortable, unpleasant, and difficult (Stromer-Galley & Muhlberger, 2009). It can also be detrimental for self-esteem and feelings of acceptance, and can result in a sense of dissonance (Hardin & Higgins, 1996; Matz & Wood, 2005).

1.1 THE PROCESS OF REACHING AGREEMENT (OR NOT)

Although much is known about the consequences of agreement and disagreement—or attitude similarity and dissimilarity—it is unclear whether the way in which agreement is reached between individuals affects these consequences. Agreement can be reached in several different ways. For example, one may agree with a partner fortuitously, or may come to agree with a partner by persuading the partner to agree with his/her opinion, by being persuaded to adopt the partner's opinion, or by meeting in the middle ground with a partner. Arriving at agreement in these ways may have different outcomes, both in terms of the relational (interpersonal) and epistemic consequences that emerge due to agreement. Although there may be different ways in which individuals reach disagreement as well, I am concerned here with differences that emerge based on how *agreement* is reached.

Research on attitudinal deviance in groups supports the idea that the way in which agreement is reached matters by demonstrating that different ways of reaching agreement produce differences in evaluations of the agreer. For example, Levine, Saxe, and Harris (1976) found that a target person who consistently agreed with group consensus was more attractive than an individual who moved from disagreement to agreement with the group, which is consistent with Byrne's (1971) predictions about the attraction-similarity link. Not only did these different types of agreement result in different attractiveness levels, but participants also attributed the agreer's final position to different factors (Levine et al., 1976): Participants believed the target person's belief in his or her opinion correctness was more important in determining the individual's final position when that person consistently agreed with group consensus, but that the desire to be liked and the desire to be similar to the group were more

important in determining the individual's final position when the target person disagreed and then agreed with consensus (see also Levine & Ranelli, 1978; Levine, Sroka, & Snyder, 1977).

1.2 SHARED REALITY THEORY

Although the above research shows that different ways of arriving at agreement with a group produce different levels of attraction and different attributions, it is still unclear whether different ways of achieving agreement would lead to different epistemic outcomes. One conceptual framework that may help to address this question is shared reality theory. Shared reality, the end state of a motivated process, is achieved when people communicate their inner states about a specific referent and come to perceive those inner states about that same referent as shared by others (Echterhoff, 2012; Echterhoff, Higgins, et al., 2009; Hardin & Conley, 2001; Hardin & Higgins, 1996; Stukas, Bratanova, Peters, Kashima, & Beatson, 2010). To the extent that an individual's experiences are shared by others, those experiences are no longer seen as subjective and, instead, come to be viewed as reflecting objective reality (Echterhoff, 2012; Echterhoff, Higgins, et al., 2009; Hardin & Higgins, 1996).

Four conditions underlie shared reality (Echterhoff, 2012; Echterhoff, Higgins, et al., 2009). The first condition requires that a commonality in inner states, not just overt behaviors, exists between the individuals (Echterhoff, 2012; Echterhoff, Higgins, et al., 2009; Hardin & Higgins, 1996). That is, the individual must hold the same beliefs, opinions, or judgments about the target as the other individual(s) and cannot simply mimic the behavior exhibited by others. The second condition contends that the shared reality must be experienced as about some referent target (Echterhoff, 2012; Echterhoff, Higgins, et al., 2009). That is, the corresponding

inner states must be in reference to some aspect of the target or world that can be verified by others. Third, it is crucial to take into account the process of achieving shared reality, particularly the participants' underlying motives, as well as the successful end state of achieving shared reality (Echterhoff, 2012; Echterhoff, Higgins, et al., 2009). Solely focusing on whether shared reality is achieved or not would overlook the two key types of motives that contribute to this process—epistemic and relational (Echterhoff, 2012; Echterhoff, Higgins, et al., 2009; Hardin & Conley, 2001; Hardin & Higgins, 1996).

Epistemic motives involve the desire to establish certainty, to work towards a valid and reliable understanding of the world, and to determine what is real (Echterhoff, 2012; Echterhoff, Higgins, et al., 2009; Hardin & Higgins, 1996; Higgins, 1999). Shared reality serves the epistemic function of achieving reliability, validity, generality, and predictability (Hardin & Higgins, 1996).

Relational motives involve the desire for affiliation and connectedness, which can produce a sense of security and increased self-esteem (Echterhoff, 2012; Echterhoff, Higgins, et al., 2009). Shared reality serves the relational function of creating or maintaining valued social relationships, facilitating subsequent understanding (Hardin & Higgins, 1996), and fostering interpersonal trust (Echterhoff, Higgins, & Groll, 2005).

The fourth and final condition requires the successful recognition of a commonality of inner states with another or others about the target referent (Echterhoff, 2012; Echterhoff, Higgins, et al., 2009; Hardin & Higgins, 1996). There is no shared reality without the individual believing that his/her inner state about a target matches that of someone else. In sum, shared reality fosters a subjectively valid and reliable sense of the world and a sense of connectedness and belonging with others (Echterhoff, 2012; Echterhoff, Higgins, et al., 2009; Hardin &

Higgins, 1996). For example, current members' agreement about the characteristics of a newcomer to the group should increase their certainty about their impression of the newcomer (serving epistemic motives) and strengthen their social bonds (serving relational motives).

1.3 THE CURRENT PROJECT

The goal of this research project was to determine how people respond to different ways of reaching (or not reaching) agreement using shared reality theory to predict differences in epistemic outcomes. To accomplish this goal, I utilized a 3 (agreement type: fortuitous, persuaded, or no agreement) X 2 (evaluation type: substance or style) between-participants design. Each participant read an ambiguous passage about a target and made a judgment about this person, learned the opinion of an ostensible other participant (the partner), provided his/her rationale for his/her judgment of the target to the partner through an audio recording, and learned the final opinion of the partner. Participants were randomly assigned to one of the six cells of the design. For example, some participants were assigned to a condition in which the partner fortuitously agreed with them about the target and gave a style evaluation for his/her final judgment of the target after ostensibly listening to the participant's audio recording. Epistemic outcomes, specifically belief certainty and epistemic trust, were then measured.

Epistemic trust is the extent to which someone can rely on another person's view when forming his/her representation of a target (Echterhoff et al., 2005; Echterhoff, Higgins, Kopietz, & Groll, 2008). Although epistemic trust has been used as a measure of shared reality and has been examined as a mediator (e.g., of the effects of group membership, communication goals,

and audience status—conditions that were expected to produce different levels of shared reality—on recall bias) in prior studies (Echterhoff et al., 2005; Echterhoff et al., 2008; Echterhoff, Lang, Kramer, & Higgins, 2009), in the present study, I included a measure of the experience of shared reality designed to capture this subjective perception more directly. I also included a measure of epistemic trust, but I conceptualized epistemic trust as an outcome that should result from creating shared reality with another person. That is, the experience of having created a shared reality about a topic with another person should lead one to believe that the other holds valid and reliable judgments about other targets as well (i.e., should increase epistemic trust).

My hypotheses are based on the premises that (1) the experience of shared reality is created when the participant and the partner end the interaction in agreement (either by fortuitously agreeing or by persuading the partner to agree) and (2) the strength of the shared reality is based on the extent to which the participant believes that the other person genuinely agrees with him/her. This latter prediction builds on a finding obtained by Prislin, Levine, and Christensen (2006), which highlighted the importance of the quality of support for one's position. Prislin and colleagues found that people who moved from minority to majority status in a group because others shifted to their position subsequently identified more strongly with both their faction and the group as a whole when the others ostensibly moved because of genuine agreement rather than a more superficial reason.

In accordance with these premises, I developed three hypotheses. I summarize the hypotheses here, before providing a detailed rationale for each in the paragraphs that follow. I hypothesized that the fortuitous and persuaded agreement conditions would result in a greater experience of shared reality than the no agreement condition (H1). I also predicted that the

fortuitous and persuaded agreement conditions would result in higher epistemic outcomes (i.e., belief certainty and epistemic trust) than the no agreement condition (H2A) and that the relationship between agreement type and these epistemic outcomes would be mediated by the experience of shared reality (H2B). I was agnostic about the relative impact of the two agreement conditions on the experience of shared reality and epistemic outcomes, because a plausible case could be made for the superiority of either condition. Due to this, I first compared the no agreement condition to the fortuitous and persuaded agreement conditions together and then compared the fortuitous and persuaded agreement conditions to each other. Finally, I expected that a substance evaluation (in which the individual is praised for his/her argument quality) would result in a greater experience of shared reality and thus, higher belief certainty and epistemic trust, than a style evaluation (in which the individual is praised for his/her style of presentation), but only in the persuaded agreement condition (H3).

1.4 RATIONALE FOR HYPOTHESES

I expected that the fortuitous and persuaded agreement conditions would result in a greater experience of shared reality (H1) and higher epistemic outcomes than the no agreement condition (H2A) and that the relationship between agreement and epistemic outcomes would be mediated by the experience of shared reality (H2B). The former prediction is based on the assumption that the participant would believe that his/her inner state matches that of the partner in the former two conditions but not in the latter condition, and this matching is a necessary requirement for shared reality to be created (Echterhoff, 2012; Echterhoff, Higgins, et al., 2009).

The latter prediction is based on the assumptions that epistemic benefits would result in the agreement conditions because (a) one's belief seems more objective when it is shared (Hardin & Higgins, 1996); (b) individuals who hold attitudes similar to ours validate our views (Reid et al., 2013); and (c) epistemic benefits have been verified as products of achieving shared reality (Echterhoff, 2012; Echterhoff, Higgins, et al., 2009; Hardin & Conley, 2001; Hardin & Higgins, 1996). In contrast, I expected the no agreement condition to produce low epistemic benefits because disagreement and attitude dissimilarity lead to uncertainty (Hardin & Higgins, 1996; Matz & Wood, 2005; McGarty et al., 1993).

Regarding H1, I expected the agreement condition that yielded the greater experience of shared reality to elicit the greater belief certainty and epistemic trust as well. As suggested above, plausible hypotheses could be generated as to which agreement condition would elicit stronger outcomes. One possibility is that the experience of shared reality in the fortuitous agreement condition would surpass that in the persuaded agreement condition because the total amount of agreement in the former condition is greater. The participant may feel greater similarity to the partner in this condition as well, which could elicit benefits above that of the persuaded agreement condition. The participant also may feel that final agreement in the fortuitous condition is more impactful than final agreement in the persuaded agreement condition for two reasons. First, the participant cannot attribute the partner's opinion to social influence; the partner stated this opinion before knowing what the participant's opinion was. Because the partner fortuitously agreed with the participant, the participant should see his/her agreement as completely genuine. In addition, according to the information processing approach to the similarity-attraction link, individuals use similarity to make inferences about what positive qualities others hold (Reid et al., 2013). Building on this argument, research has shown that a

positive evaluation from a positive evaluator is especially rewarding (Kelman & Eagly, 1965; Sigall, 1970; Sigall & Aronson, 1969). Participants in the present study may have a positive view of the partner after fortuitously agreeing and thus view their final agreement as more positive as a consequence –that is, a positive message from a positive evaluator may be perceived as closer to the participant's opinion of the target than a positive message from an evaluator that is less liked (Kelman & Eagly, 1965). If the participant ascribes positive qualities to the partner because of the initial agreement, he/she may see the partner's final agreement as providing more shared reality because the inner state of the partner would feel closer to the participant's actual inner state.

An alternative possibility is that the persuaded agreement condition may produce a stronger experience of shared reality than the fortuitous agreement condition. Specifically, the fortuitous agreement condition lacks the reinforcement that the partner agrees for the same reasons as the participant. It is possible, for example, that the partner who fortuitously agrees about his/her overall opinion of the target has very different reasons for holding that opinion than does the participant, which may diminish the experience of shared reality, as well as the resulting epistemic benefits.

Past research on social comparison, attitude alignment research, and gain-loss theory also support the idea that the persuaded agreement condition may result in a stronger experience of shared reality. Though Festinger (1954) contended that social comparison leads to pressures toward uniformity and discussed the tendency to stop comparing to others who are very divergent (Suls, Martin, & Wheeler, 2000), critics have argued that divergent opinion can actually represent correctness and that people seek out novelty and difference. Goethals and Darley's (1977) attributional reformulation of comparison theory suggests that people may

discount agreement from those who are similar to them to the extent that they share biasing characteristics and that agreement from a dissimilar other increases the probability that the belief is valid. Research supports this hypothesis for belief-type opinions—judgments that refer to potentially verifiable assertions of reality. When making belief-type judgments, participants preferred dissimilar comparison targets and felt more confident in belief type opinions when a dissimilar other agreed (Suls et al., 2000). When forming value-type opinions (judgments that refer to whether something is right or appropriate for themselves), participants preferred similar comparison targets. In the present study, participants read information about a target person, which I expected that participants would perceive as verifiable assertions about the target person. Thus, initial disagreement in this study may create a sense that the partner is dissimilar enough that eventual agreement from him/her feels especially meaningful and valid. This would produce a strong sense of shared reality, thus creating the greatest increases in belief certainty and epistemic trust.

Attitude alignment, which occurs when a partner shifts his/her attitude to more closely match one's own attitude, may also produce a greater sense of validity than fortuitous attitude similarity (Reid et al., 2013). Compared to pre-existing attitude similarity, which does not necessarily provide evidence that the individual's reasoning for his/her opinion is sound (Sigall, 1970), attitude alignment is a more active form of feedback that serves as an implicit evaluation of the individual or the individual's argument (Reid et al., 2013). This evaluative component could produce a strong sense of shared reality as the partner has been convinced and has shifted his/her opinion to match the participant's view. This should contribute to high levels on epistemic outcome variables.

Gain-loss theory also supports the prediction that the persuaded agreement condition will produce a stronger experience of shared reality than the fortuitous agreement condition (Aronson & Linder, 1965). This theory contends that the feeling of gain or loss is extremely important and provides a more potent reward or punishment than invariant behavior. That is, one individual can reward another and subsequently become liked more though dispensing positive feelings (Sigall, 1970). This is suggested to be driven by cognitive and affective causes (Aronson & Linder, 1965). By changing his/her opinion, A shows B that A's opinion is not due to his/her typical style of response but is a function of his/her perception of B's argument. This suggests that A's opinion is a more meaningful and valuable evaluation. B also experiences the reward of the positivity of A agreeing and a reward of the negative feelings initially felt by A's disagreement being reduced. People are attracted to individuals who create and reduce this negative drive state, as indicated by findings that gains in esteem (receiving a few negative evaluations followed by many positive evaluations) produce higher attraction than consistent high esteem (receiving all positive evaluations). As such, a shift from disagreement to agreement by the partner may produce a strong experience of shared reality and result in strong epistemic benefits. Levine, Ranelli, and Valle (1974) suggest that for the gain-loss effect to occur, the behavior of the target must be sufficiently important to the participant. This should be the case in the current study, which required cooperation as participants corresponded with the partner and the goal to create shared reality should dominate an ambiguous situation (Hardin & Higgins, 1996).

Finally, regarding the impact of the substance/style variable, I expected that the effect of evaluation type would differ by agreement condition (H3). I expected that, in the persuaded agreement condition, a substance evaluation would yield a greater experience of shared reality and thus, higher epistemic outcomes, compared to a style evaluation because the reason behind

why the partner came to agree with the participant should matter when reaching agreement in this condition. The content of the evaluation in the substance evaluation condition suggests that the partner genuinely holds the same inner state about the target (he/she agrees that the participant's reasoning is logical and holds the same opinion about the target), whereas a style evaluation does not clearly send this same message to the participant. A style evaluation (in which one is praised for his/her style of presentation) may exemplify the superficial success of achieving shared reality; the partner comes to agree with the participant's view, but the evaluation made does not reflect the quality or validity of the participant's argument. This evaluation does not inform the participant as to why the partner feels one way or another about the target and therefore does not give insight into the partner's inner state (cf. Prislin et al., 2006). Without this crucial information, the participant may not be able to recognize that his/her inner state matches that of the partner, which is vital to the creation of shared reality (Echterhoff, 2012; Echterhoff, Higgins, et al., 2009). Agreement based on matters not relevant to the topic or argument should not increase certainty of the belief or trust in the other person's judgment.

I did not expect this simple effect of evaluation type for the fortuitous agreement condition because the evaluation should not matter when the partner has already fortuitously agreed the participant. People tend to assume common inner states with others (Echterhoff, 2012; Echterhoff, Higgins, et al., 2009). This suggests that in both the substance and style evaluation conditions, the participant will infer that his/her inner states matches that of the partner after he/she has agreed with the participant and therefore the evaluation variable will not affect the impact of fortuitous agreement. I also did not expect this simple effect of evaluation type in the disagreement condition because regardless of the evaluation made by the partner, he/she still disagrees with the participant and disagreement should not lead to a sense of shared reality and thus, epistemic outcomes.

In summary, I predicted that the fortuitous and persuaded agreement conditions would result in a greater experience of shared reality (H1), higher belief certainty (H2A), and more epistemic trust than the no agreement condition (H2A). I also predicted that the relationship between agreement type and epistemic outcomes would be mediated by the experience of shared reality (H2B). Finally, I predicted Agreement Type X Evaluation Type interactions on the measures of shared reality, belief certainty, and epistemic trust. Specifically, I predicted a significant simple effect of evaluation type (H3) in the persuaded agreement condition such that a substance evaluation would result in a stronger experience of shared reality, higher belief certainty, and more epistemic trust compared to a style evaluation, but I did not predict this effect in the fortuitous agreement or no agreement condition.

Although my main focus was on epistemic outcomes, in light of the fact that differences in the way in which agreement is reached may also affect interpersonal outcomes—as illustrated by Levine and colleagues (1976)—and that a relational motivation is a key feature of shared reality theory (Echterhoff, 2012; Echterhoff, Higgins, et al., 2009), I also included relational variables for exploratory purposes.

2.0 METHOD

2.1 PILOT STUDY

I conducted a pilot study to choose a suitable passage for the main study. The goal was to ensure that (a) main study participants would be about equally likely to perceive a target person described in the passage as positive or negative and (b) the strength of participants' positive/negative judgments would be moderate at most. The reason for these criteria was so that it would seem plausible to the main study participants that an ostensible partner could disagree with their judgment, and that participants would not feel so strongly as to believe an ostensible partner would not likely change his or her judgment.

Thirty participants (14 female; 16 male; *M* age = 18.40, *SD* = .72) were recruited from the psychology subject pool at the University of Pittsburgh to participate in a lab study on evaluations of other people. In this study, participants evaluated two passages, which were presented in a counterbalanced order. Passages were used in prior studies (Echterhoff et al., 2005; Echterhoff, Lang, Kramer, & Higgins, 2009) and included six ambiguous paragraphs describing a target person. Passages differed in the qualities of the target being described. Pilot participants gave much more positive than negative evaluations to one passage, whereas they gave a more equal distribution of positive and negative evaluations to the other passage. The latter passage was chosen for the main study (see Appendix for the chosen passage).

For the passage that was used in the main study, 19 participants reported a positive judgment of the target, and 11 participants reported a negative judgment. Using a continuous measure for participants' judgments, participants had a mean rating of 5.47 (*SD* = 1.85) on a scale ranging from 1 (Very Negative) to 9 (Very positive). The mean did not statistically differ from the midpoint of the scale (5), $t(29) = 1.38$, $p = .178$. Participants also indicated how confident they were in their judgments of the target on a scale from 1 (Not Confident at All) to 9 (Very Confident). The mean score on this item was 6.57 (*SD* = 1.81), which did significantly differ from the highest endpoint of the scale (9), $t(29) = 7.35$, $p < .001$. This suggested that participants' initial views of the target were not extremely strongly held, which was desirable for the purposes of the main study. Participants also indicated how a typical undergraduate would judge the target on a scale from 1 (Very Negative) to 9 (Very Positive). This item had a mean score of 5.23 (*SD* = 1.79). The mean did not significantly differ from the midpoint of the scale (5), $t(29) = .71$, $p = .482$.

On separate questions investigating what percentage of undergraduates would judge the target positively and negatively, participants indicated that 52.97% of undergraduates would judge the target positively, which did not differ significantly from 50%, $t(29) = .65$, $p = .519$, and 46.70% of undergraduates would judge the target negatively, which did not differ from 50%, $t(29) = .73$, $p = .47$. Overall, the pilot data suggested that, using the chosen passage, it was likely that some participants in the main experiment would judge the target positively and others negatively, and that it was plausible to believe that another participant could agree or disagree with one's own positive/negative judgment and could be swayed to change his/her judgment.

2.2 MAIN EXPERIMENT

2.2.1 Participants

One hundred and eighty-three individuals (115 female; 68 male; M = 18.95, SD = 1.34) were recruited from the psychology subject pool at the University of Pittsburgh to participate in a study on evaluations of other people.

2.2.2 Procedure

The main lab study employed a 3 (agreement type: fortuitous, persuaded, or no agreement) X 2 (evaluation type: substance or style) between-participants design. Participants were randomly assigned to conditions. For a breakdown of the number of participants per cell, see Table 1. Participants came to the lab and learned that an ostensible other participant would be completing the same study in a different room than they. Participants then were taken to a lab room and given the ambiguous passage previously described in the pilot study section (see Appendix) that described a target person. After reading the passage, participants reported their judgment of this person (positive/negative) and how certain they felt about their initial judgment. Items are described in detail in the Measures subsection. Next, the experimenter told each participant whether he/she and the ostensible other participant (hereafter referred to as the "partner") agreed or disagreed on their judgment (positive/negative) of the target depending on condition. In the fortuitous agreement condition, the participant was told that he/she and the partner agreed about the target. In the persuaded agreement and no agreement conditions, the participant was told that he/she and the partner did not agree about the target.

Participants were then asked to explain their judgment of the target person to the partner by creating an audio recording that was ostensibly heard by the partner. Several minutes after completing the recording, the participant was given a written response, ostensibly from the partner, that indicated the partner's current judgment of the target—that is, the partner's judgment after he/she listened to the participant's explanation of the reasons for his/her own judgment. The partner ostensibly responded to the item "In general, how would you evaluate the person you just read about? (Positive/Negative)" by circling his/her answer and responded to the open-ended item "What comments do you have for the other participant after listening to his/her audio tape?" by writing his/her comments in a free response blank. In the fortuitous agreement condition, the partner circled the same judgment as the participant did (positive/negative). In the persuaded agreement condition, the partner also circled the same judgment as the participant did. In the no agreement condition, the partner circled the opposite judgment as the participant did.

The written response to the participant included a one sentence evaluation of the participant's audio recording which differed by condition. In the substance evaluation condition, the participant read "You had very good arguments and your reasons were very logical" (with an added phrase of "but my view hasn't changed" for the no agreement condition), and in the style evaluation condition, the participant read "Your presentation style was impressive and I enjoyed listening to your speech" (with an added phrase of "but my view hasn't changed" for the no agreement condition). Finally, the participant filled out several dependent measures including epistemic outcomes, a measure of shared reality, manipulation checks, and demographic information. Because shared reality includes a relational motivation, participants also completed exploratory measures focusing on their relationship with the partner.

At the end of the study, the experimenter probed participants for suspicion before debriefing participants, explaining the deception and its purpose, and telling participants that they could withdraw their data if they wished to do so. Finally, participants were thanked and granted credit.

2.2.3 Measures

Measures are described in the order in which they were administered.

2.2.3.1 Initial belief (positive/negative) Participants completed a one-item measure to assess their initial judgment (positive/negative) of the target in the passage. Participants responded to the question "In general, how would you evaluate the person you just read about? (Positive/Negative)" by circling their answer.

2.2.3.2 Initial belief certainty Participants completed a one-item measure to assess their initial certainty in their judgment of the target in the passage. Participants responded to the question "How certain are you in your evaluation about that person?" on a 7-point Likert scale ranging from 1 (Not at All) to 7 (Extremely). Higher scores indicate higher initial certainty.

2.2.3.3 Epistemic outcomes

Post-manipulation belief certainty. Participants completed four questions designed to assess how certain they were in their judgment of the target person after receiving feedback from the partner. The questions "How certain are you in your evaluation about the person described in

the passage?," "How confident are you in your evaluation of the person described in the passage?," "How doubtful are you of your evaluation about the person described in the passage?," and "How clear is your evaluation about the person described in the passage?" were answered using a 7-point Likert scale ranging from 1 (Not at All) to 7 (Extremely). Scores on the third item were reversed scored and then items were averaged to create a post-manipulation belief certainty composite ($\alpha = .81$). Higher scores indicate higher belief certainty.

Epistemic trust. Whereas belief certainty assesses certainty about the specific belief, this epistemic trust measure was meant to tap more general beliefs regarding whether one can trust the other person's judgments beyond the specific belief. Participants completed a 4-item measure of epistemic trust adapted from a study conducted by Echterhoff and colleagues (2008). The questions "Is the other participant a trustworthy source of information about the person described in the passage?," "Does the other participant seem to be a reliable source of knowledge?," "Is the other participant a trustworthy source of information about other people in general?," and "Does the other participant seem to be trustworthy?" were answered using a 7-point Likert scale ranging from 1 (Not at All) to 7 (Very Much). Scores on these items were averaged to create an epistemic trust composite ($\alpha = .86$). Higher scores indicate higher trust in the partner's judgments.

2.2.3.4 Experience of shared reality Participants completed five questions designed to assess their experience of shared reality with the partner. I expected that a composite index of shared reality would serve as a mediator of the relationship between agreement type and epistemic outcomes. Participants responded to the questions "By the end of the study, the other participant and I are on the same wavelength about the person described in the passage," "By the end of the study, the other participant and I understand the person described in the passage in the

same way," "By the end of the study, the other participant and I experienced the same thoughts and feelings about the person described in the passage," "By the end of the study, the other participant and I had trouble seeing each other's perspectives about the person described in the passage," and "By the end of the study, the other participant and I share the same view of the person described in the passage" using a 7-point Likert scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). Scores on the fourth item were reversed scored and then items were averaged to create an experience of shared reality composite ($\alpha = .95$). Higher scores indicate a greater sense of shared reality with the partner.

2.2.3.5 Relational outcomes

Perceived responsiveness. Participants completed a version of the 12-item Perceived Responsiveness Scale (Reis, 2006) that was modified to fit the context of meeting a new person. This measure included items such as, "Compared to most experiences I've had meeting somebody new, I get the feeling that this person sees the 'real' me" and "Compared to most experiences I've had meeting somebody new, I get the feeling that this person is responsive to my needs." Items were answered using a 7-point Likert scale ranging from 1 (Not At All True) to 7 (Completely True). Scores were averaged to create a perceived responsiveness composite ($\alpha = .92$). Higher scores indicate greater perceived responsiveness.

Liking. Participants answered two questions ($r[164] = .57$, $p < .001$) to measure how much they liked the other participant. The questions "How much do you like the other participant?" and "How much do you respect the other participant?" were answered using a 7-point Likert scale ranging from 1 (Not at All) to 7 (Extremely). Scores were averaged to create a liking composite. Higher scores indicate greater liking of the partner.

Relational trust. Participants completed a 3-item measure of relational trust adapted from a 5-item measure used by Echterhoff, Lang, and colleagues (2009). The questions "How close do you feel to the other participant?," "Do you feel comfortable working together with the other participant?," and "How connected do you feel to the other participant?" were answered using a 7-point Likert scale ranging from 1 (Not at All) to 7 (Extremely). Scores were averaged to create a relational trust composite ($\alpha = .75$). Higher numbers indicate greater trust.

2.2.3.6 Manipulation checks

Initial and final agreement with the partner. Participants responded to one item that assessed whether they accurately perceived the partner's agreement pattern. In response to the question "Over the course of the study, how did your opinion and the opinion of the other participant about the person described in the passage relate?," each participant indicated that he/she and the partner either agreed before communicating and agreed after communicating; disagreed before communicating and disagreed after communicating; agreed before communicating and disagreed after communicating; or disagreed before communicating and disagreed after communicating.

Evaluation type. Participants were asked to indicate what the partner said in response to their communication. This was an open-ended question. Participants were evaluated as correctly indicating what the partner had said if they reported that the partner had complimented their logical argument in the substance evaluation condition or complimented their style of presentation in the style evaluation condition. I categorized each response as correctly indicating what the partner had said or not and planned to have a second coder rate any ambiguous responses, however, each response clearly and correctly indicated what the partner had said.

Self-efficacy. Aronson and Linder (1965) suggest that by changing his/her opinion from

negative to positive, one person provides another person with an experience of success, which could lead to feelings of efficacy or competence. For this reason, I expected that the persuaded agreement condition would produce higher feelings of efficacy than the fortuitous agreement condition. I used this as a manipulation check to ensure that the two types of agreement (fortuitous and persuaded agreement) led to different experiences of reaching that agreement with the partner. Participants completed two sets of questions designed to measure self-efficacy: one set to tap feelings of efficacy that were specific to the paradigm of persuading a partner to agree and one set to tap general feelings of self-efficacy. The first, more specific, self-efficacy questions were: “I believe that I was successful in convincing the other participant to agree with my evaluation of the person described in the passage,” “I feel that I had an influence on the other participant’s final evaluation of the person described in the passage,” “I feel that I am bad at convincing others of my viewpoint,” “I am the type of person who is confident when explaining my viewpoint to others,” and “I am better than most people at convincing others to agree with my position about something.” These items were answered using a 7-point Likert scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). Scores on the third item were reversed scored and then items were averaged to create a manipulation-specific self-efficacy composite ($\alpha = .71$). The second, more general self-efficacy questions were from an 8-item measure developed by Chen, Gully, and Eden (2001). Representative questions were “I will be able to successfully overcome many challenges,” "I will be able to achieve most of the goals that I have set for myself," and "Even when things are tough, I can perform quite well." These questions were

answered using a 7-point Likert scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). Scores were averaged to create a general self-efficacy composite ($\alpha = .93$). Higher scores on the first measure indicated greater efficacy in persuading the partner to agree, and higher scores on the second measure indicated greater general feelings of self-efficacy.

3.0 RESULTS

Exclusion criteria were decided on a priori. Data from seventeen participants were excluded from analyses: six participants who expressed suspicion about the ostensible partner and 11 participants who failed the manipulation check regarding their initial and final agreement status with their partner by indicating a pattern of agreement from the partner that was different than their assigned condition.

All analyses were two-way ANOVAs with agreement type and evaluation type as independent variables and included initial belief certainty as a covariate unless otherwise indicated.

3.1 INITIAL BELIEF (POSTIVE/NEGATIVE)

Participants answered one question to assess their initial judgment of the target in the passage. Eighty participants (48.2%) indicated that they had a positive judgment of the target and 86 participants (51.8%) indicated that they had a negative judgment of the target.

3.2 INITIAL BELIEF CERTAINTY

I conducted a two-way ANOVA to determine whether the conditions differed in the certainty with which participants held their beliefs about their judgment prior to the manipulation. The mean initial certainty score was 4.67 (*SD* = 1.02) on a 7-point scale. There was an unexpected main effect of evaluation type on this measure, $F(1, 160) = 5.59$, $p = .019$, *partial* $\eta^2 = .034$: Participants who were later assigned to the style evaluation condition were more certain initially about their judgment (*M* = 4.86, *SD* = .87) than were those who were later assigned to the substance evaluation condition (*M* = 4.49, *SD* = 1.12). Therefore, I included initial belief certainty as a covariate in subsequent analyses of variables of interest. Because of the inclusion of the covariate, I report standard errors instead of standard deviations in subsequent results. If the pattern of results changed when the covariate was not included, I note this in a footnote. As expected, neither the main effect of agreement type nor the Agreement Type X Evaluation Type interaction was significant, Fs < 2.09.

3.3 MANIPULATION CHECKS

Before proceeding to examine key dependent variables, I first looked at the manipulation checks to ensure that conditions differed in the intended ways.

3.3.1 Initial and final agreement with the partner

Participants answered one question to assess whether they accurately perceived the partner's agreement pattern. As described above, data from 11 participants who indicated an agreement pattern that differed from the condition to which they were randomly assigned were excluded from data analysis.

3.3.2 Evaluation type

Participants responded to an open-ended question regarding what the partner said in response to their communication. No participant indicated a response from the partner that differed from the response (substance/style evaluation) that was actually provided to the participant.

3.3.3 Self-efficacy

I included two measures of self-efficacy: one that tapped feelings of efficacy specific to persuading the partner to agree and a general measure of self-efficacy. I had expected that participants in the persuaded agreement condition would feel more efficacy than those in the fortuitous agreement or no agreement conditions. For the more specific self-efficacy measure, the mean self-efficacy score was 4.60 (SD = 1.07) on a 7-point scale. There was a main effect of agreement type, $F(2, 159) = 41.27$, $p < .001$, *partial* $\eta^2 = .38$. The agreement conditions differed as expected: The persuaded agreement condition led to significantly greater feelings of efficacy (M = 5.29, SD = .97) than the fortuitous agreement condition (M = 4.82, SD = .92), $p < .001$, and the no agreement (M = 3.77, SD = .70) condition, $p < .001$. Participants in the fortuitous

agreement condition also felt higher feelings of efficacy than did those in the no agreement condition, $p = .006$. Neither the main effect of evaluation type nor the interaction was significant, Fs < 1.

For the more general measure, the mean self-efficacy score was 5.33 ($SD = .87$) on a 7-point scale. The two-way ANOVA yielded neither a main effect of agreement type or evaluation type, nor an interaction, Fs < 1.18.

In sum, the manipulation checks revealed that the conditions differed in the intended ways: Most participants accurately reported information relevant to their agreement type and evaluation type and the persuaded agreement condition elicited greater feelings of self-efficacy than the fortuitous and no agreement conditions on the measure that tapped self-efficacy specific to the manipulation of persuading the partner to agree.

3.4 EXPERIENCE OF SHARED REALITY

The mean experience of shared reality score was 4.08 ($SD = 1.94$) on a 7-point scale. The two-way ANOVA yielded a main effect of agreement type, $F(2, 158) = 211.31$, $p < .001$, *partial* $\eta^2 = .728$. Planned comparisons revealed that the two agreement conditions ($M = 5.11$, $SE = .14$) led to a significantly greater experience of shared reality compared to the no agreement condition ($M = 1.89$, $SE = .14$), $F(1, 158) = 357.07$, $p < .001$. Further analyses revealed that the fortuitous agreement condition ($M = 5.78$, $SE = .13$) resulted in more shared reality than the persuaded agreement condition ($M = 4.43$, $SE = .15$), $p < .001$, which differed in turn from the no agreement condition, $p < .001$. Neither the main effect of evaluation type nor the interaction was significant, Fs < 1. To summarize, H1 was supported: Agreeing with the partner, either

fortuitously or by persuasion, led to a greater experience of shared reality than not agreeing with the partner.

I then looked at the simple effect of evaluation type in the persuaded agreement condition. Contrary to H3, evaluation type did not produce differences in the experience of shared reality in the persuaded agreement condition, $p = .701$.

Next, I sought to determine whether the conditions also affected belief certainty and epistemic trust—two variables that shared reality theory and relevant research suggest should be associated with the experience of shared reality.

3.5 EPISTEMIC OUTCOMES

3.5.1 Post-manipulation belief certainty

The mean post-manipulation belief certainty score was 4.91 ($SD = 1.01$) on a 7-point scale. The two-way ANOVA supported predictions: In support of H2A, a main effect of agreement type emerged, $F(2, 159) = 3.20$, $p = .043$, *partial* $\eta^2 = .039$[1]. Planned comparisons confirmed that the two agreement conditions ($M = 4.99$, $SE = .09$) led to higher belief certainty than the no agreement ($M = 4.75$, $SE = .09$) condition, $F(1, 159) = 5.49$, $p = .02$. Although I expected that the agreement condition that yielded the greatest experience of shared reality (as it happened, fortuitous agreement) would yield the highest post-manipulation belief certainty, there was no significant difference in post-manipulation belief certainty between the fortuitous agreement (*M*

[1] When initial belief certainty is not entered as a covariate in the model, neither the main effects of agreement type or evaluation type nor the interaction are significant, Fs < 2.15.

= 5.04, *SE* = .08) and persuaded agreement (*M* = 4.94, *SE* = .09) conditions, *p* = .42. The main effect for evaluation type was not significant, *F* < 1. However, there was a significant Agreement Type x Evaluation Type interaction, *F*(2, 159) = 4.98, *p* = .008, *partial* η^2 = .059.

Following up on this interaction, I compared the style and substance conditions in the persuaded agreement condition to determine whether belief certainty differed by evaluation type in this specific agreement condition (H3). There was a marginal difference between the two evaluation types within the persuaded agreement condition, *F*(1, 159) = 3.60, *p* = .06, but this difference was in the opposite direction to what I expected: Participants who received a style evaluation (*M* = 5.12, *SE* = .13) felt more certain than participants who received a substance evaluation (*M* = 4.78, *SE* = 4.77). A posteriori analyses also revealed an unexpected simple effect of evaluation type in the no agreement condition, *F*(1, 159) = 6.61, *p* = .011: In this case, participants who received a substance evaluation (*M* = 4.97, *SE* = .12) felt more certain than participants who received a style evaluation (*M* = 4.53, *SE* = .13). Those participants in the no agreement condition who received a substance evaluation also felt as certain as participants in either agreement condition did, *F*(2,159) = 1.56, *p* = .214. I discuss these findings further in the Discussion section.

3.5.2 Epistemic trust

The mean epistemic trust score was 4.47 (*SD* = 1.94) on a 7-point scale. The two-way ANOVA supported predictions: In accordance with H2A, a main effect of agreement type emerged, *F*(2, 159) = 6.58, *p* =.002, *partial* η^2 = .076. Planned comparisons revealed that the two agreement conditions (*M* = 4.61, *SE* = .13) led to significantly higher epistemic trust in the partner compared to the no agreement condition (*M* = 4.18, *SE*=.13), *F*(1, 159) = 6.86, *p* = .010. In other

words, participants who initially agreed with the partner or persuaded the partner to share their evaluation reported feeling that they could trust the partner's judgments more than those who did not agree with the partner. This parallels the effect on post-manipulation belief certainty and supports H2A that the two agreement conditions would lead to higher epistemic benefits compared to no agreement. Further analyses revealed that the fortuitous agreement condition (M = 4.83, SE = .12) also resulted in higher epistemic trust compared to the persuaded agreement condition (M = 4.38, SE = .14), p = .02. Although I was agnostic about the relative impact of the two agreement conditions, this finding is in accord with my expectation that the agreement condition that yielded the greatest experience of shared reality would elicit more epistemic trust than the other agreement condition.

Neither the main effect of evaluation type nor the interaction was significant, Fs < 1.99. Contrary to H3 and paralleling the effect on the experience of shared reality variable, the simple effect of evaluation type in the persuaded agreement condition was not significant, $F(1, 159)$ = 2.92, p = .09.

3.6 MEDIATION ANALYSES

3.6.1 Post-manipulation belief certainty

Because there was a significant interaction between the two independent variables on post-manipulation belief certainty, I conducted a moderated mediation analysis using PROCESS (Model 15, Hayes, 2013). This model allows for a test of moderated mediation in which the predictor variable predicts an outcome (with the possibility that this path is moderated) and a

mediator, and a mediator predicts an outcome, with the path from the mediator to the outcome variable also moderated. Agreement type was the predictor, post-manipulation belief certainty was the outcome variable, the experience of shared reality was the mediator, and evaluation type was the moderator. Because agreement type was multi-categorical, I used dummy codes with the no agreement condition serving as the reference group. I ran Model 15 twice to obtain all of the parameter estimates: once with the fortuitous agreement/no agreement comparison (with the persuaded agreement/no agreement comparison entered as a covariate) and once with the persuaded agreement/no agreement comparison (with the fortuitous agreement/no agreement comparison entered as a covariate). Initial belief certainty was also entered as a covariate in each model as in the analyses of main dependent variables.

The confidence interval for each conditional indirect effect included zero, suggesting that there was no moderated mediation: For the persuaded agreement/no agreement comparison, the indirect effect of condition on belief certainty via the experience of shared reality was not significant for participants in the style evaluation condition, 95% CI = -.27 to .94, or for participants in the substance evaluation condition, 95% CI = -.87 to .17. For the persuaded agreement/no agreement comparison, this same conditional indirect effect was not significant in either the style evaluation condition, 95% CI = -.19 to .51, or in the substance evaluation condition, 95% CI = -.41 to .27. Thus, the portion of H2B that concerned belief certainty was not supported; the experience of shared reality did not mediate the relationship between agreement type and post-manipulation belief certainty at either level of evaluation type.

3.6.2 Epistemic trust

Because there was only a main effect of agreement type on epistemic trust (and not an Agreement Type x Evaluation Type interaction), I tested for simple mediation using PROCESS (Model 4, Hayes, 2013) to run a bootstrap analysis with 5000 resamples. This technique uses regression to model the effects of the predictor: (a) directly on the outcome variable, (b) directly on the mediator, and (c) indirectly on the outcome variable via the mediator. The output of this technique includes a 95% confidence interval for each estimate. Agreement type was the predictor, epistemic trust was the dependent variable, and the experience of shared reality was considered as a mediator. Initial belief certainty and evaluation type were included as covariates. The predictor variable, agreement type, was multi-categorical. Because PROCESS is able to run Model 4 with a multicategorical predictor, I was able to run just one model that included all parameter estimates. PROCESS first dummy-coded the predictor variable into two separate predictor terms: one predictor consisting of the fortuitous agreement/no agreement comparison and one predictor consisting of the persuaded agreement/no agreement comparison (see Hayes & Preacher, 2014, for details). The no agreement condition was chosen as the reference group because it was used as a control condition.

The confidence interval for the indirect effect of agreement type on epistemic trust via the experience of shared reality did not include zero for fortuitous agreement compared to the no agreement reference group, 95% CI = .30 to 1.51, or for the persuaded agreement condition compared to the no agreement reference group, 95% CI = .18 to 1.03. Thus, shared reality is a mediator of the relationship between both fortuitous and persuaded agreement (compared to no agreement) conditions and epistemic trust. This supports the portion of H2B that concerned epistemic trust; participants felt a greater experience of shared reality in each of the agreement

conditions compared to the no agreement condition and this experience of shared reality, in turn, was associated with greater epistemic trust.

3.7 RELATIONAL OUTCOMES

Although my focus was on epistemic outcomes, I included some relational measures for exploratory purposes. All analyses were two-way ANOVAs with agreement type and evaluation type as independent variables and included initial belief certainty as a covariate unless otherwise indicated. Descriptive statistics are reported in tables for these exploratory variables.

3.7.1 Perceived responsiveness

The mean perceived responsiveness score was 2.85 (*SD* = .98) on a 7-point scale. The usual ANOVA yielded neither a main effect of agreement type nor evaluation type, nor a significant interaction, *F*s < 2.33[2]. See Table 2 for means and standard errors.

3.7.2 Liking

The mean liking score was 5.07 (*SD* = .95) on a 7-point scale. The two-way ANOVA yielded a main effect of evaluation type, $F(1, 159) = 9.30$, $p = .003$, *partial* $\eta^2 = .055$: Participants who received a style evaluation ($M = 5.58$, $SE = .18$) liked the partner more than those who received a

[2] When initial belief certainty is not entered as a covariate, the main effect of type of evaluation becomes marginally significant, $F(1, 158) = 3.58$, $p = .06$, *partial* $\eta^2 = .022$, such that a style evaluation ($M = 2.99$, $SD = .95$) led to higher perceived responsiveness than a substance evaluation ($M = 2.72$, $SD = 1.00$).

substance evaluation (M = 4.69, SE = .17). This was qualified by a significant interaction, F(2, 159) = 3.59, p = .03, *partial* η^2 = .043. Planned analyses revealed that a style evaluation led to more liking than a substance evaluation in the no agreement condition, F(1, 159) = 13.12, p < .001. However, this simple effect was not significant in the persuaded agreement or no agreement conditions, Fs < 2.81. See Table 3 for means and standard errors. The main effect of agreement type was not significant, F < 1.

3.7.3 Relational trust

The mean relational trust score was 3.11 (SD = 1.06) on a 7-point scale. The two-way ANOVA yielded a main effect of evaluation type, F(1, 159) = 6.75, p = .01, *partial* η^2 = .041: A style evaluation (M = 3.32, SE = .11) resulted in more relational trust than a substance evaluation (M = 2.91, SE = .11). This was qualified by a significant Agreement Type x Evaluation Type interaction, F(2, 159) = 5.17, p = .007, *partial* η^2 = .061. Subsequent analyses revealed that a style evaluation led to more relational trust than a substance evaluation in the no agreement condition, F(1, 159) = 15.99, p < .001. However, in the persuaded agreement condition and in the fortuitous agreement condition, evaluation type did not affect relational trust, Fs < 1. The main effect of agreement type was not significant, F < 1.37. This pattern of results parallels the pattern of results described above on liking. See Table 4 for means and standarderrors.

4.0 DISCUSSION

The primary goal of the present study was to determine whether the way in which agreement is achieved impacts one's experience of shared reality and thus, the epistemic consequences that arise. I hypothesized and found that the fortuitous and persuaded agreement conditions would result in a greater experience of shared reality than the no agreement condition (H1). Subsequent analyses also revealed that the fortuitous agreement condition led to a greater experience of shared reality than the persuaded agreement condition, which led to a greater experience of shared reality than the no agreement condition. Past research has discussed the benefits of creating shared reality (e.g. Echterhoff et al., 2005; Echterhoff et al., 2008; Echterhoff, Lang, et al., 2009; Kopietz, Echterhoff, Niemeir, Hellmann, & Memon 2009; Kopietz, Hellmann, Higgins, & Echterhoff, 2010), however these benefits are always discussed in comparison to a condition in which shared reality was not created. This is the first experiment that I am aware of to illustrate that different ways of reaching agreement can result in different experiences of shared reality. This highlights the importance of considering how one comes to create a shared reality with a partner or partners when considering what benefits creating a shared reality will elicit.

I also hypothesized that the fortuitous and persuaded agreement conditions would result in higher belief certainty and epistemic trust compared to the no agreement condition (H2A) and that these relationships would be mediated by the experience of shared reality (H2B). Regarding

belief certainty, H2A was supported, however H2B was not supported: Participants in the fortuitous and persuaded agreement conditions felt more certain than participants in the no agreement condition, but this was not mediated by the experience of shared reality at either level of evaluation type. There was an unexpected interaction of agreement type and evaluation type on belief certainty as well. In the no agreement condition, participants who received a substance evaluation were more certain than participants who received a style evaluation. Participants in the no agreement condition who received a substance evaluation felt just as certain as participants who received a substance evaluation and did come to agree with the partner, either fortuitously or by persuasion. This suggests that participants were able to achieve a sense of certainty in their belief about the target person's positivity/negativity either through reaching agreement with the partner or by reading that the partner thought the participant had a logical argument. Whereas research has demonstrated that a shared view increases certainty (Gudykunst & Nishida, 1984; Hardin & Higgins, 1996; McGarty et al., 1993) and validity (Echterhoff, 2012; Echterhoff, Higgins, et al., 2009; Newcomb, 1953), the current project suggests that perhaps an evaluation from the partner suggesting that one's argument is logical may indicate partial agreement or at least enough social support for one's view to enhance people's belief certainty even when the partner reports a belief that is different than one's own. Though the partner does not share the same inner state as the participant, which is required to create a complete sense of shared reality, a substance evaluation in this case may suggest that the partner understands and approves of the participant's inner state enough to create some degree of shared reality between the pair.

Also in support of H2A, participants in the fortuitous and persuaded agreement conditions felt greater epistemic trust (i.e., felt that they could rely on the partner to provide valid

judgments) than participants in the no agreement condition. Past research has used epistemic trust as a measure of shared reality and as a mediator to explain the relationship between conditions that were expected to create shared reality (vs. conditions not expected to result in shared reality) and recall bias, using the Saying-Is-Believing paradigm (Echterhoff et al, 2005; Echterhoff et al., 2008; Echterhoff, Lang, et al., 2009). I treated epistemic trust as an outcome that I expected would follow from the experience of shared reality—a variable that I measured separately. I expected that participants would first feel a sense of shared reality with their partner as a result of sharing an inner state about a target and that this experience of shared reality would lead them to come to trust that partner's judgments more globally (increased epistemic trust). Indeed, the fortuitous agreement condition yielded a greater experience of shared reality than the persuaded agreement condition and also resulted in more epistemic trust. In support of H2B, the experience of shared reality mediated the relationship between agreement type and epistemic trust: Participants in the fortuitous and persuaded agreement conditions felt a greater experience of shared reality than those in the no agreement condition and this, in turn, led them to view the partner as a reliable source of knowledge beyond the specific evaluation. This suggests that the experience of shared reality may be a precursor to epistemic trust, although I am cautious about making causal inferences based on the correlation between these measured variables. Nonetheless, researchers may find it fruitful to measure the experience of shared reality in future studies in addition to the implications of that experience (e.g., epistemic trust).

Finally, I hypothesized that a substance evaluation would lead to greater shared reality, belief certainty, and epistemic trust than a style evaluation, specifically in the persuaded agreement condition (H3). This hypothesis was not supported. There was an unexpected and marginally significant effect of evaluation type in the opposite direction than was expected on

post-manipulation belief certainty. Although I am cautious not to over interpret a marginal effect, it is possible that participants perceived a style evaluation as a more rewarding evaluation than I had anticipated. Perhaps participants perceived the style evaluation as a compliment on how they presented their rationale and also a compliment on their actual argument (even though there was no explicit mention of their argument quality in this condition) and that a substance evaluation only provided a compliment on their argument. This provides a possible explanation of why I did not find the expected difference between substance and style conditions in the persuaded agreement condition.

4.1 EXPLORATORY RELATIONAL OUTCOMES

Although I did not find any significant effects on perceived responsiveness, there was a consistent pattern of results across the liking and relational trust variables. On each of these variables, there was a main effect of evaluation type: A style evaluation led to increased liking and more relational trust than a substance evaluation. This was qualified by a significant interaction: Participants who received a style evaluation liked the partner more and felt greater relational trust than participants who received a substance evaluation, but only in the no agreement condition. It may be the case that participants perceived the partner who did not agree with them as still trying to maintain a relationship with them by providing a style evaluation, but perceived the partner who praised their logical arguments and refused to change his/her opinion as not wanting to develop a relationship with them. Participants might also have viewed the partner who disagreed but provided a style evaluation as providing a more global compliment than when he/she provided a substance evaluation. This might explain why those participants in

the no agreement condition liked and trusted the partner more when they received a style evaluation than a substance evaluation. In the agreement conditions, evaluation type did not affect how much participants liked the partner or how much relational trust they felt. Agreement should be rewarding in itself because sharing inner states leads to liking (Echterhoff, Higgins, et al., 2009; Miller, 2001) and attraction (Byrne, 1962; Byrne, 1971; Finkel & Eastwick, 2015; Miller, 2001). These results suggest that agreement is equally rewarding regardless of what evaluation type that it is paired with.

Surprisingly, the main effect of agreement type was not significant. This contrasts with previous work that has demonstrated that sharing inner states results in greater liking (Echterhoff, Higgins, et al, 2009; Miller, 2001) and attraction (Byrne, 1962; Byrne, 1971, Finkel & Eastwick, 2015; Miller, 2001). Perhaps the inclusion of the partner's evaluation of the participants' communication overwhelmed the impact of agreement type; all participants received some sort of praise from the partner regardless of whether the partner agreed with them or not. This evaluation may be more meaningful than just learning whether the partner views the target negatively or positively because the evaluation is self-relevant to the participant. Thus, evaluation type may be more relevant to relational outcomes.

4.2 LIMITATIONS

Although I did find that the experience of shared reality mediated the effect of agreement type on epistemic trust, I did not find evidence that shared reality mediated the effect of agreement type on belief certainty. Thus, H2B was partially supported. Both the epistemic trust and belief certainty measures had high (and similar) reliability, suggesting that measurement error is not

likely the cause for this difference. However, there may be something theoretically different between these two outcomes that I had not anticipated. Perhaps agreement type affects the experience of shared reality, which leaves a lasting impact on psychologically distant and abstract views and beliefs (thus leading to trusting someone's judgments as reliable and valid beyond the specific believe at hand), but specific judgments that the individual has already made are less impacted by this. The heightened experience of shared reality in the fortuitous condition may have led participants to trust the partner as a valid source of knowledge in general, but perhaps did not affect belief certainty because participants had already formed their beliefs prior to learning about the partner's views.

Previous research has suggested that, when motivated to create a sense of shared reality, participants feel more certain in their view by reducing uncertainty through audience tuning and that audience tuning leads to memory bias (Kopietz et al., 2009). After reading a passage about an ambiguous target, participants described that target to an audience in either a positively or negatively skewed way based on the audience's previously held belief about that target (message bias). Participants subsequently remembered the target in a way that was consistent with their positively or negatively tuned message (recall bias). Both message bias and recall bias were significantly and positively correctly with confidence in one's belief, but only for participants with a shared reality motive. In the current study, participants did not tune their messages to the audience, which may have been a necessary step in getting the experience of shared reality to predict post-manipulation belief certainty. This possibility could be addressed in future research.

4.3 FUTURE DIRECTIONS

In this study, I was interested in how ways of arriving at agreement lead to differences in epistemic outcomes through the experience of shared reality. To investigate this, I used a fortuitous agreement condition and a persuaded agreement condition (plus a no agreement condition for comparison). Even though the former two conditions both involved agreement, they differed in an important way: Persuading another to agree enhanced feelings of self-efficacy compared to fortuitous agreement. Although I predicted this difference, future studies should include a change condition that does not enhance efficacy on the part of the participant. For example, a condition could be included in which the participant believes that the partner fortuitously changes his/her mind before the participant has had a chance to communicate his/her rationale for his/her opinion. Future studies may also examine other types of agreement such as the participant being persuaded by or reaching a compromise with the partner. It would be interesting to know whether reaching agreement by changing one's own inner state or initial belief to some degree would have different implications for shared reality and epistemic outcomes compared to reaching agreement while maintaining one's original position.

Future studies may also investigate the effects of creating multiple shared realities with another person and then disagreeing on a new topic. Perhaps this would have consequences for future agreement and epistemic trust, willingness and desire to work together, or responsiveness to this person. One potentially interesting possibility to explore would be whether having established prior shared realities can buffer against negative consequences of disagreement, such as disliking or unwillingness to compromise.

4.4 STRENGTHS AND IMPLICATIONS

This is the first experimental study to investigate how ways of reaching agreement affect epistemic outcomes. It is also the first to examine shared reality as a mechanism for any such differences. This extends previous work on shared reality, which has used epistemic trust as a measure of shared reality (Echterhoff et al., 2005; Echterhoff et al., 2008), by highlighting the importance of capturing the experience of shared reality that leads to feelings of epistemic trust. Previous work has involved manipulation of motives to achieve shared reality (Echterhoff et al., 2005; Echterhoff et al., 2008). In contrast, in the current study, I manipulated experiences that people go through in daily life and used a measure of the subjective experience of shared reality to illustrate how these typical experiences affect the experience of shared reality and how that experience is translated into the extent to which one feels that one can rely on the other as a valid source of knowledge to base one's opinion on. Capturing the experience of shared reality instead of skipping right to the epistemic trust that it appears to facilitate may be a more ecologically valid way to understand this process in the real world.

The findings of the present study have several important implications. Shared reality is an important mechanism by which social, cultural, and political beliefs and knowledge are created and maintained. This study demonstrated that different ways of reaching agreement produce different experiences of shared reality, which provides insight into features that shape people's beliefs and knowledge—whether and how people came to agree. This study provides evidence that one's experience of shared reality was associated with feelings of epistemic trust. This endorsement of relying on the other person's judgments as a valid source of knowledge may facilitate future agreement and even lead people to rely on this other person's judgments on other topics, possibly without considering opposing information. This may help explain how pairs or

groups may come to fast decisions without considering all of the information available (e.g., groupthink; Janis, 1982). Especially when there is a strong sense of shared reality, particular types of agreement (i.e., fortuitous agreement) may lead people to trust one another's judgments somewhat blindly.

This study and future studies in this area may also inform strategies for negotiation and conflict resolution, as well as shed light on how to maintain and build harmony in a relationship. I found that evaluation type was particularly important when the participant and the partner did not agree. That is, among participants whose partners continued to disagree with them, those who received a style evaluation liked and trusted the partner more than those who received a substance evaluation. Yet, among these same participants whose partners continued to disagree with them, those who received a substance evaluation experienced greater belief certainty than those who received a style evaluation. A substance evaluation in the no agreement condition also led to a level of certainty that matched that of participants who experienced agreement with the partner. This suggests that when people disagree with someone, the evaluation that they provide can affect how that individual feels both about the other person who provides the evaluation and about his/her own opinion. This may inform the use of different strategies to maintain harmony with others depending on the desired outcome. For example, people involved in negotiations may not want to praise their opponent's logical argument if they are in disagreement so as not to boost the opponent's certainty is his/her opinion (which may make the opponent resistant to being swayed or to compromising). Close relationship partners or individuals working closely together with other individuals may want to include stylistic praise to their partners when they are in disagreement to promote interpersonal harmony.

4.5 CONCLUSION

People like to be in agreement with others. Whereas past work has demonstrated that agreement is important, the present work illustrates how different ways of arriving at agreement produce different epistemic (and, in some cases, relational) outcomes. In particular, it seems that when people are able to arrive at agreement in a way that heightens their experience of shared reality with another person, these experiences of agreement are most likely to bolster people's certainty in their beliefs and reliance on the other person's judgments.

APPENDIX A

AMBIGUOUS PASSAGE DESRIBING TARGET PERSON

Michael has his own standards of behaving. As a student, he would tell on fellow classmates whom he saw break school rules, like cheating on tests. In fact, he claimed to his friends that never once in his life has he thought about cheating. *[moral–self-righteous]*

Michael recently started making attempts to keep up to date with cultural knowledge. He read a book about Europe, sat in a music appreciation workshop, and eats in fashionable ethnic restaurants. When being with friends, he often talks at length about foreign cultures and art. *[cultivated– artificial]*

Michael spends a great amount of his time in search of what he likes to call excitement. He has already climbed Mt. McKinley, done some skydiving, shot the Colorado rapids in a kayak, driven in a demolition derby, and piloted a jet-powered boat—without knowing much about boats. He has been injured, and even risked death, a number of times. *[adventurous–reckless]*

Other than business engagements, Michael's contacts with people are surprisingly limited. He feels he doesn't really need to rely on anyone.*[independent–aloof]*

Once Michael makes up his mind to do something it is as good as done no matter how long it might take or how difficult the going might be. Only rarely does he change his mind even when it might be better if he did. *[persistent–stubborn]*

To improve his life Michael tries to save money. He uses coupons, buys things on sale, and avoids donating money to charity or lending money to friends. *[thrifty–stingy]*

Note. The italicized word pairs in brackets at the end of each paragraph indicate the two opposite trait labels that can be derived from the passage.

APPENDIX B

TABLES

Table 1: Number of Participants per Cell

Fortuitous Agreement-Substance	Fortuitous Agreement-Style	Persuaded Agreement-Substance	Persuaded Agreement-Style	No Agreement-Substance	No Agreement-Style
31	31	25	23	30	26

Table 2: Means and Standard Errors for Perceived Responsiveness of the Partner by Condition

	Mean	Standard Error
Fortuitous Agreement-Style	2.84	.17
Fortuitous Agreement-Substance	2.88	.18
Persuaded Agreement-Style	2.93	.19
Persuaded Agreement-Substance	2.88	.18
No Agreement-Style	3.02	.18
No Agreement-Substance	2.68	.18

Table 3: Means and Standard Errors for Liking of the Partner by Condition

	Mean	Standard Error
Fortuitous Agreement-Style	5.09	.16
Fortuitous Agreement-Substance	5.15	.16
Persuaded Agreement-Style	5.10	.16
Persuaded Agreement-Substance	4.62	.17
No Agreement-Style	5.56	.17
No Agreement-Substance	4.68	.17

Table 4: Means and Standard Errors for Relational Trust by Condition

	Mean	Standard Error
Fortuitous Agreement-Style	3.23	.18
Fortuitous Agreement-Substance	3.33	.18
Persuaded Agreement-Style	3.15	.18
Persuaded Agreement-Substance	2.81	.18
No Agreement-Style	3.52	.18
No Agreement-Substance	2.81	.18

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